

## **REMARKS/ARGUMENTS**

### **Claim Amendments**

By the present amendment, claims 1, 38, 39, 41, 54, 56, 57 and 65, have been amended, claims 15-36 and 49-53 have been cancelled herein and claims 75-102 are new.

Claims 1, 41, 54, 56 and 57 have been amended to specify that bimodal meso/macroporous siliceous materials are prepared. Support for this amendment is found, for example, on page 5, line 16, of the application as filed. Claim 1 has been further amended to specify that the reaction conditions are suitable for phase separation to occur before gelation which is supported, for example, by page 5, lines 24-25, of the application as filed. Claim 1 has been further amended to remove the compounds of Formula I.

Claim 1 has been amended to remove the second occurrence of the expression "suitable for the hydrolysis and condensation of the precursor to a siliceous material". This expression has also been removed from claim 38, which depends on claim 1. The Applicant has removed these expressions to improve the clarity of the claims by removing repeated expression that appeared redundant.

Claims 41, 54, 56 and 57 have been amended to utilize language that is consistent with claim 1 to describe the reaction conditions. Accordingly, these claims have been amended to utilize the expression "conditions suitable for hydrolysis and condensation of the precursor to a siliceous material and for phase separation to occur before gelation, wherein the conditions comprise combining...".

Claims 1, 41, 54, 56 and 57 have been amended to limit the pH range to "about 4 to 10". Support for this amendment is found on page 21, line 16, of the application as filed.

Claim 65 has been amended to correct an obvious typographical error by replacing the word "ort" with "or".

Claims 75-95 are new claims that depend on claim 39 and correspond in scope to, and therefore are supported by, previous claims 16-36, respectively.

Claims 96-98 are new claims depending on claims 1, 39 and 41, respectively, and further specify that the combining of the organic polyol silane and one or more additives is done in the presence of one or more biomolecules. Support for these claims is found, for example, on 28, lines 4-6, and page 16, lines 18-23, of the application as filed.

Claim 99-53 are new claims depending on claim 98 and correspond in scope to, and therefore are supported by, previous claims 51-53, respectively.

The claim amendments have been made without prejudice and without acquiescing to any of the Examiner's objections. The Applicants submit that no new matter has been added to the claims as a result of these amendments and their entry is respectfully requested. The Applicants reserve the right to file the canceled subject matter in divisional patent applications.

The Official Action dated December 28, 2006 has been carefully considered. It is believed that the claims submitted herewith and the following comments represent a complete response to the Examiner's rejections and place the present application in condition for allowance. Reconsideration is respectfully requested.

**Recordation of Substance of Telephone Interview with Examiner Peng**

In accordance with 37 CFR §1.113(b), the Applicants submit the following recordation of the substance of a telephone interview with the Examiner that occurred on December 15, 2006. The following information is to supplement the information provided on form PTOL-413 dated December 20, 2006, prepared by the Examiner.

Present at the interview were Examiner Peng and Patricia Folkins (agent for the Applicants). There were no exhibits shown or demonstrations conducted during the interview. The merits of all of the currently rejected claims were discussed. Specific prior art that was discussed included Gill (J. Am. Chem. Soc., (1998), 120, 8587-8598), Nakanishi688 (US 5,009,688) and Nakanishi875 (US 5,624,875).

The principle topic of discussion was the merits of the experimental results provided in the declaration under 37 C.F.R. §1.132 of Michael A. Brook, filed with the Applicants' Response dated October 17, 2006. The Examiner was not satisfied with that results performed at pH 11 provide a clear enough difference between the precursors DGS and PGS to support the unexpectedness of the results for DGS.

The Applicants suggested that a narrower pH range, for example pH 4 to 10 as supported by page 21, line 16 of the application as file, might be claimed. The Examiner suggested that comparison data be obtained for the preparation of siliceous materials from DGS and PGS in the presence of a water soluble polymer at pH 10.

The Examiner also suggested that the limitations that phase separation occurs before gelation and the preparation of bimodal siliceous materials be included in claim 1 to further distinguish this claim from the cited art.

### **Claim Objections**

The Examiner has noted that claims 28-30 contain a typographical informality. Claims 28-30 have been cancelled by the present amendment, rendering the Examiner's objection moot.

### **Double Patenting**

The Examiner has provisionally objected to claims 1-5, 8, 37-38, 40, 49-51, 54-60 and 74 under the judicially created doctrine of obviousness-type double patenting as

being unpatentable over claims 25-27 and 37-40 of Applicants co-pending application no 10/449,511.

The Applicants have submitted herewith a terminal disclaimer which renders the Examiner's rejection of 1-5, 8, 37-38, 40, 49-51, 54-60 and 74 moot.

In light of the above, the Applicants request that the Examiner's rejection of claims 1-5, 8, 37-38, 40, 49-51, 54-60 and 74 under the judicially created doctrine of obviousness-type double patenting be withdrawn.

### **35 U.S.C. §112**

The Examiner has objected to claims 1-38, 40-61 and 74 under 35 U.S.C. §112, first paragraph, as the Examiner contends that the specification is not enabling for a pH in the range of about 4 to about 11.5. The Applicants have amended claims 1, 41, 54, 56 and 57, and all claims dependent thereon, to limit the pH range to about 4 to 10, which is supported by page 21, line 16, of the application as filed. Claims 15-36 and 49-53 have been cancelled herein, rendering the Examiner's objection to these claims moot.

In light of the above amendment, the Applicants request that the Examiner's objection to claims 1-38, 40-61 and 74 under 35 U.S.C. §112, first paragraph, be withdrawn.

### **35 U.S.C. §102(b)**

The Examiner has objected to claims 1-5, 8-10, 37-38 and 40-56 under 35 U.S.C. §102(b) as being anticipated by or, in the alternative obvious under 35 U.S.C. §103(a), over Zheng et al. (Abstract submitted August 2002 Conference, published August 10, 2002).

The Applicants submit that Zheng et al. is not a proper citation under 35 U.S.C. §102(b) as the actual publication date was August 25, 2002, which is after the priority

date of August 23, 2002 for the present application. The Applicants submit that the date written on the Zheng et al. abstract submitted with the IDS for this application was in error. In support of the correct publication date for the Zheng et al. abstract, the Applicants submit herewith an executed declaration under 37 C.F.R. §1.132 of Jorge Cervantes Jáuregui, the Chairperson for the conference for which the cited abstract was provided. This declaration provides confirmation that the cited abstract was not released to the public until August 23, 2002. In light of the enclosed declaration of Jorge Cervantes Jáuregui, the Applicants submit that the Examiner's objection to claims 1-5, 8-10, 37-38 and 40-56 has been rendered moot.

In light of the above, the Applicant request that the Examiner's objection to claims 1-5, 8-10, 37-38 and 40-56 under 35 U.S.C. §102(b) or, in the alternative under 35 U.S.C. §103(a), be withdrawn.

### **35 U.S.C. §103(a)**

The Examiner has maintained his objection to claims 1-5, 8-10, 38, 40-45 and 47-48 are obvious over Nakanishi688 (US 5,009,688) in view of Gill (J. Am. Chem. Soc., (1998), 120, 8587-8598), claims 1-5, 8-10, 40-45, 47-52, 54-55 and 56 are obvious over Nakanishi875 (US 5,624,875) in view of Gill, claim 38 is obvious over Nakanishi875 in view of Gill and as evidenced by Barkin (US 3,374,103) and claims 53 and 57-61 are obvious over Nakanishi875 in view of Gill.

The Examiner contends that the Applicants' Exhibit C filed with the declaration under 37 C.F.R. §1.132 of Michael A. Brook on October 17, 2006 is not persuasive because the SEM image of sample 2 (reactions performed at pH 11) do not show enough difference between the materials prepared using PGS and DGS.

By the present amendment, the Applicants have amended claims 1, 41, 54, 56 and 57, and accordingly all claims dependent thereon, to limit the pH range to about 4 to 10. Further the Applicants have submitted herewith a declaration under 37 C.F.R.

§1.132 of John D. Brennan, which provides clear evidence of the unexpected results obtained with the reaction of DGS (an organic polyol silane within the scope of the present invention) compared to PGS (the precursor taught by Gill) with water soluble polymers (e.g. PEO) at pH 10. DGS clearly provided a bimodal, meso/macroporous material at pH 10 where PGS did not.

Accordingly, the Applicants submit that the present data, along with the data provided on October 17, 2006, clearly and unequivocally show the unexpected superior results obtained with the preparation of siliceous materials from organic polyol silanes in the presence of water soluble polymers under the conditions claimed herein, in particular compared to the same conditions with the precursors of the cited art. Accordingly, the Applicants submit that the claims submitted herewith are not obvious over the cited art.

It should be noted that claims 15-36 and 49-53 have been cancelled herein rendering the Examiner's objections to these claims moot.

In light of the above, the Applicants request that the Examiner's objection to claims 1-5, 8-10, 38, 40-45, 47-48, 53 and 57-61 under 35 U.S.C. §103(a) be withdrawn.

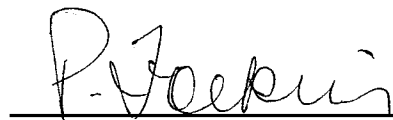
The Applicants acknowledge and appreciate the Examiner's indication that claims 6-7, 11-36 and 74 would be allowable if rewritten to overcome the double patenting objection, the claim rejection under 35 U.S.C. §112, first paragraph and/or claim objections set forth in the Office Action, and to include all of the limitations of the base claim and any intervening claims.

The Applicants acknowledge and appreciate the Examiner's indication that claims 39 and 62-73 are allowed.

In view of the foregoing arguments and amendments, we respectfully submit that the application is in order for allowance and early indication of that effect is respectfully requested. Should the Examiner deem it beneficial to discuss the application in greater detail, the Examiner is invited to contact the undersigned by telephone at (416) 957-1683 at the Examiner's convenience.

Respectfully submitted,

**BERESKIN & PARR**

A handwritten signature in cursive script, appearing to read 'P. Folkins', written over a horizontal line.

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